

SOT-23          NPN          Silicon NPN transistor in a SOT-23 Plastic Package.

High power gain, recommended for FM IF,OSC stage and AM CONV.IF stage.

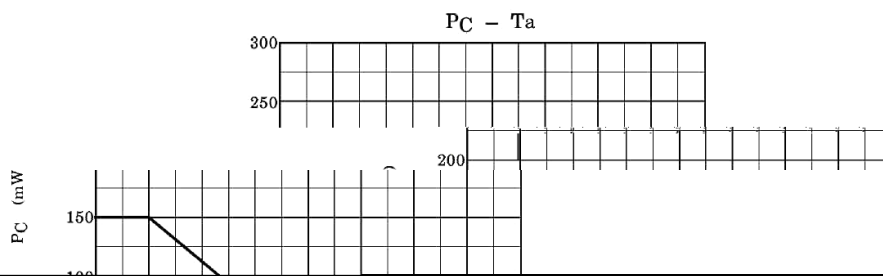
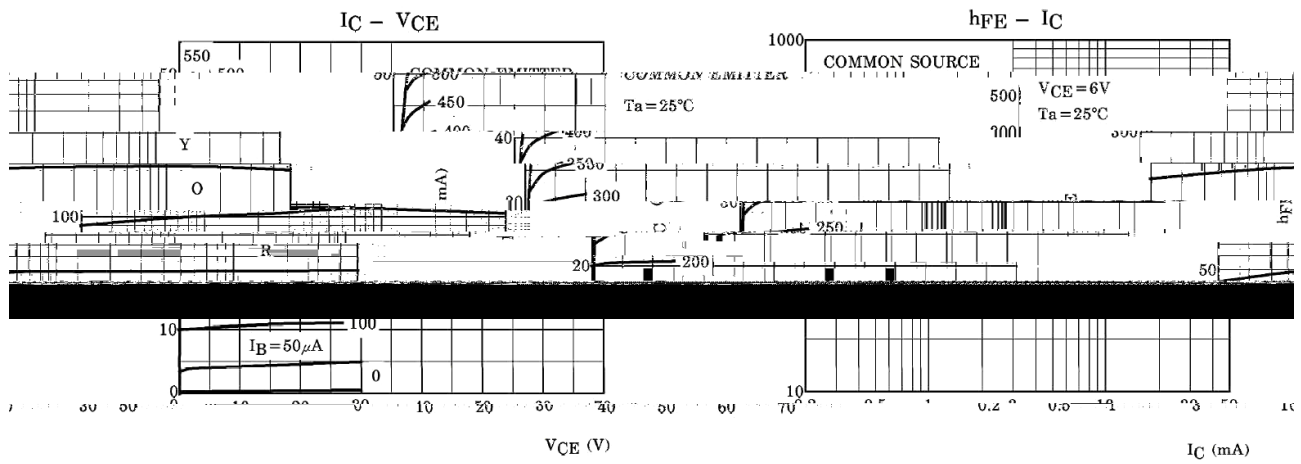
**/ Absolute Maximum Ratings(Ta=25 )**

| Parameter                    | Symbol    | Rating  | Unit |
|------------------------------|-----------|---------|------|
| Collector to Base Voltage    | $V_{CBO}$ | 35      | V    |
| Collector to Emitter Voltage | $V_{CEO}$ | 30      | V    |
| Emitter to Base Voltage      | $V_{EBO}$ | 4.0     | V    |
| Collector Current            | $I_C$     | 50      | mA   |
| Base Current                 | $I_B$     | 10      | mA   |
| Collector Power Dissipation  | $P_C$     | 150     | mW   |
| Junction Temperature         | $T_j$     | 150     |      |
| Storage Temperature Range    | $T_{stg}$ | -55 150 |      |

**/ Electrical Characteristics(Ta=25 )**

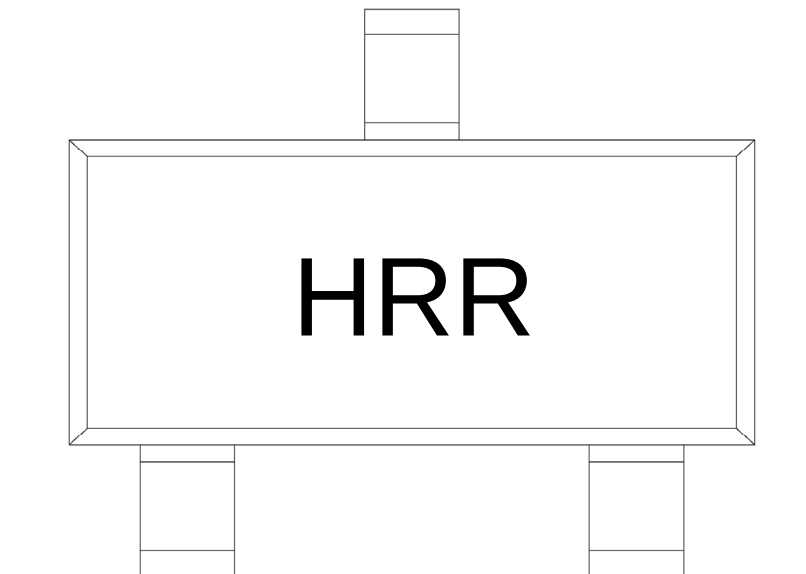
| Parameter                                     | Symbol        | Test Conditions                        | Min | Typ | Max | Unit    |
|-----------------------------------------------|---------------|----------------------------------------|-----|-----|-----|---------|
| Collector Cut-Off Current                     | $I_{CBO}$     | $V_{CB}=35V$ $I_E=0$                   |     |     | 0.1 | $\mu A$ |
| Emitter Base Cut-Off Current                  | $I_{EBO}$     | $V_{EB}=4.0V$ $I_C=0$                  |     |     | 0.1 | $\mu A$ |
| DC Current Gain                               | $h_{FE}$      | $V_{CE}=12V$ $I_C=2.0mA$               | 40  |     | 240 |         |
| Collector to Emitter Saturation Voltage       | $V_{CE(sat)}$ | $I_C=10mA$ $I_B=1.0mA$                 |     |     | 0.4 | V       |
| Base to Emitter Saturation Voltage            | $V_{BE(sat)}$ | $I_C=10mA$ $I_B=1.0mA$                 |     |     | 1.0 | V       |
| Transition Frequency                          | $f_T$         | $V_{CE}=10V$ $I_C=1.0mA$               | 100 |     | 400 | MHz     |
| Reverse Transfer Capacitance (Common Emitter) | $C_{ob}$      | $V_{CE}=10V$ $f=1.0MHz$ $I_E=0$        |     | 2.0 | 3.2 | pF      |
| Conversion gain                               | $G_{pe}$      | $V_{CE}=6.0V$ $f=10.7MHz$ $I_E=-1.0mA$ | 27  | 30  | 33  | dB      |
| Collector to Base Time Constant               | $C_{c.rbb'}$  | $V_{CE}=10V$ $f=30MHz$ $I_E=-1.0mA$    |     |     | 50  | pS      |

/ Electrical Characteristic Curve





/ Marking Instructions



H

R

R  $h_{FE}$

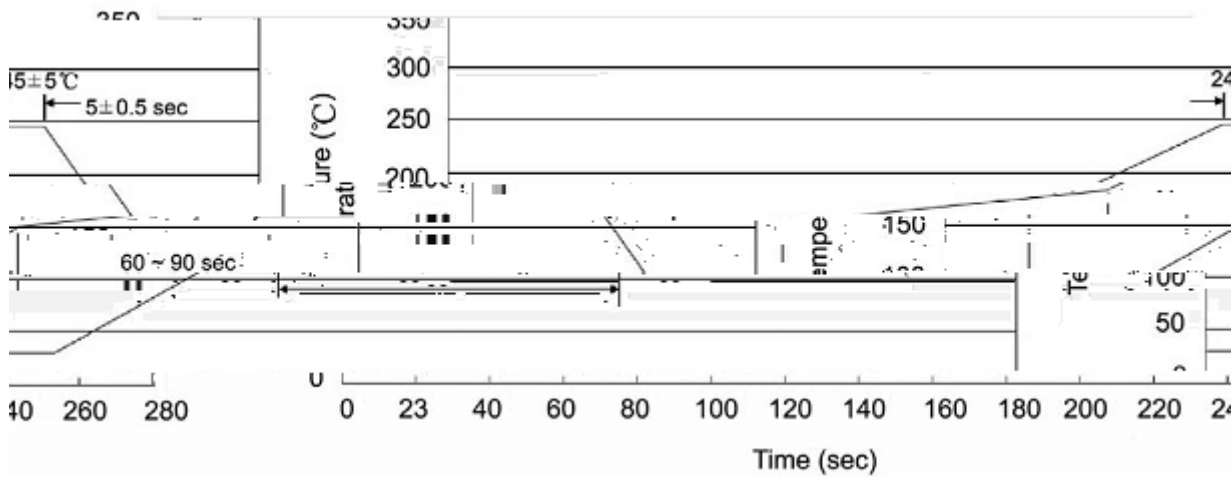
Note:

H Company Code

R Product Type Code

R  $h_{FE}$  Classifications Symbol Code

( ) / Temperature Profile for IR Reflow Soldering(Pb-Free)



Note:

- |   |       |     |           |                                         |                                      |
|---|-------|-----|-----------|-----------------------------------------|--------------------------------------|
| 1 | 25    | 150 | 60        | 90sec;                                  | 1.Preheating:25~150 , Time:60~90sec. |
| 2 | 245±5 |     | 5±0.5sec; | 2.Peak Temp.:245±5 , Duration:5±0.5sec. |                                      |
| 3 |       | 2   | 10        | /sec.                                   | 3. Cooling Speed: 2~10 /sec.         |

/ Resistance to Soldering ④ Test Conditions

260±5                      10±1 sec.                      Temp.:260±5                      Time:10±1 sec

/ Packaging SPEC.

/ REEL

| Package Type<br>封装形式 | Units 包装数量         |                         |                        |                              |                        | Dimension 包装尺寸 (unit: mm <sup>3</sup> ) |             |             |
|----------------------|--------------------|-------------------------|------------------------|------------------------------|------------------------|-----------------------------------------|-------------|-------------|
|                      | Units/Reel<br>只/卷盘 | Reels/Inner Box<br>卷盘/盒 | Units/Inner Box<br>只/盒 | Inner Boxes/Outer Box<br>盒/箱 | Units/Outer Box<br>只/箱 | Reel                                    | Inner Box 盒 | Outer Box 箱 |
| SOT-23               | 3,000              | 10                      | 30,000                 | 6                            | 180,000                | 7 ×8                                    | 180×120×180 | 390×385×205 |

/ Notices